

Ashe

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/730,726	HSU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David Nhu	2818	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/16/05.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☒ The drawings filed on 18 May 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

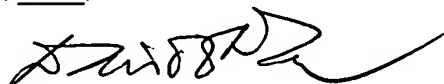
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |



### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the change and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Cancel claims 22-34.

Claim 15 (currently amended), page 8, "the first pulse" should be ~~the first voltage pulse~~—"the second pulse" should be ~~the second voltage pulse~~--

### REASONS FOR ALLOWANCE

2. Claims 1-21 are allowed.

3. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests as cited in claims 1, 14, 15: forming a colossal magnetoresistance (CMR) memory film overlying the bottom electrode having an asymmetric area; forming a top electrode having an area, less than the bottom electrode area, overlying the CMR memory film (as cited in claims 1, 14); in responding to the first voltage pulse, creating a low resistance in an asymmetric area CMR memory film; applying a second voltage pulse with a second polarity, opposite of the first polarity, to the memory cell top electrode; in response to the second voltage pulse, creating a high resistance in the asymmetric area CMR memory film; applying a third pulse having the same polarity as the second voltage pulse, and a pulse width of greater than 1 microsecond; in response to the third pulse creating a low resistance in the CMR memory film ( as cited in claim 15).

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### CONCLUSION

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Koganei (6,480,411 B1): Magnetoresistance Effect Type Memory and Method and Device for Reproducing Information from the Memory.

Hines et al (6,707,122 B1): Extraordinary Magnetoresistance at Room Temperature in Inhomogeneous Narrow Gap Semiconductors.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Nhu, (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

The examiner's supervisor, David Nelms can be reached on (571)272-1787.

*The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956*

David Nhu 

June 4, 2005

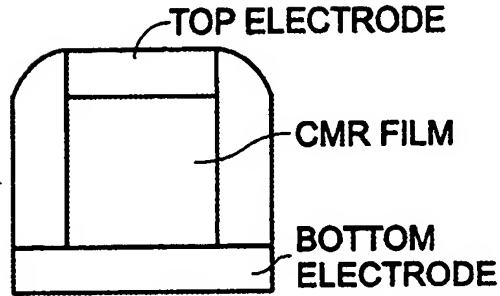


**DAVID NHU**  
**PRIMARY EXAMINER**



Replacement  
Sheet

Fig. 1  
(PRIOR ART)



Approved  
6/4/05

Fig. 2

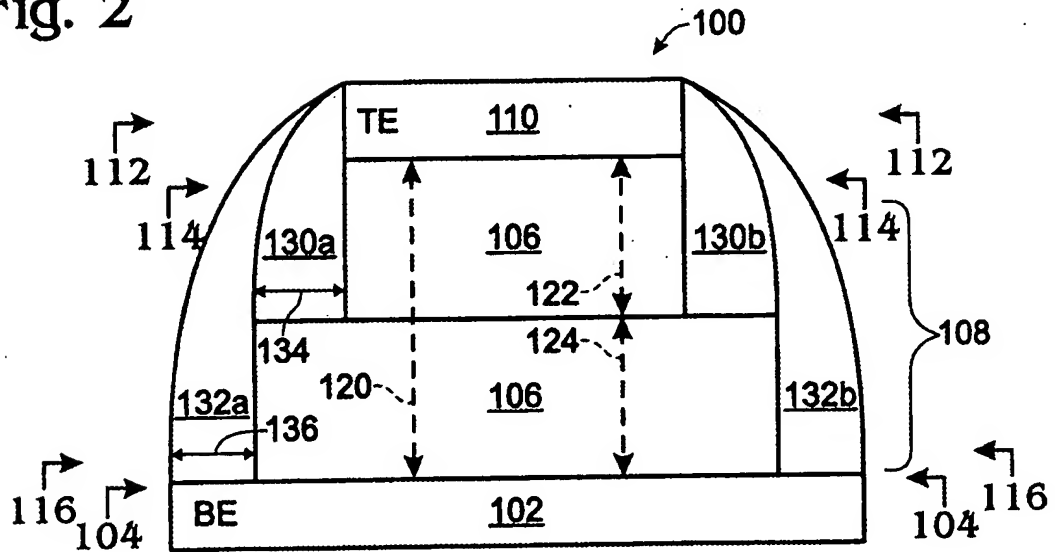
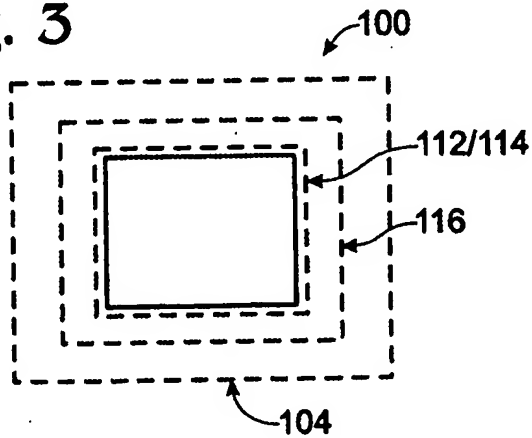


Fig. 3



Replacement  
Sheet

Fig. 4

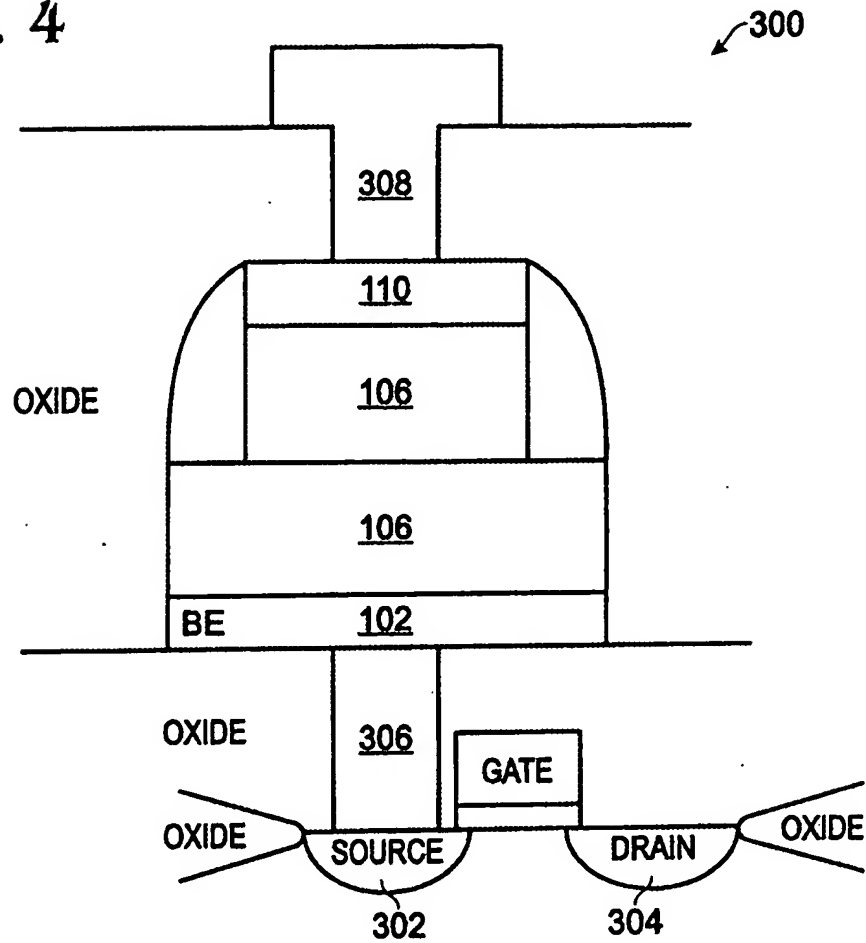
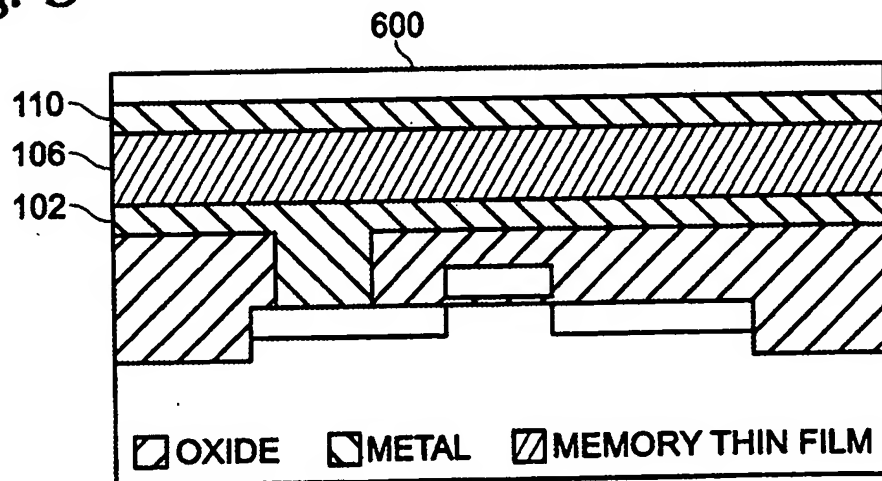


Fig. 5



Replacement  
sheet

Fig. 6a

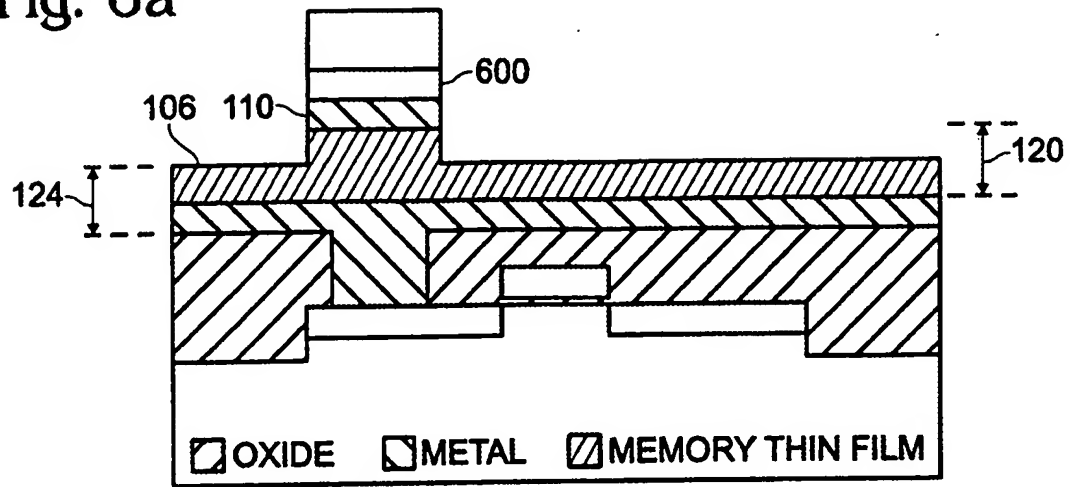


Fig. 6b

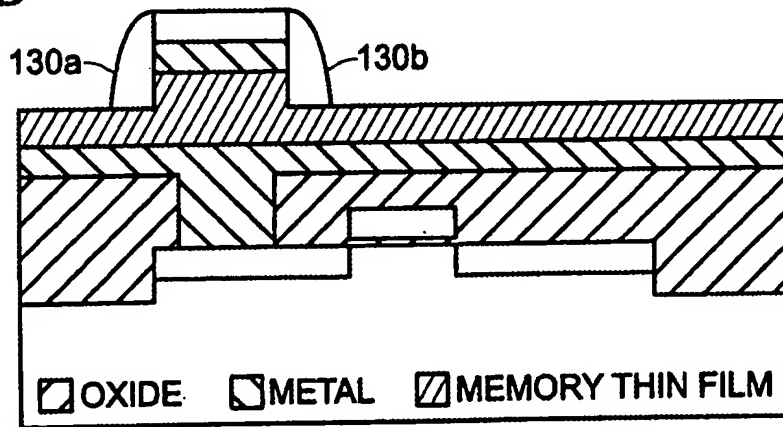
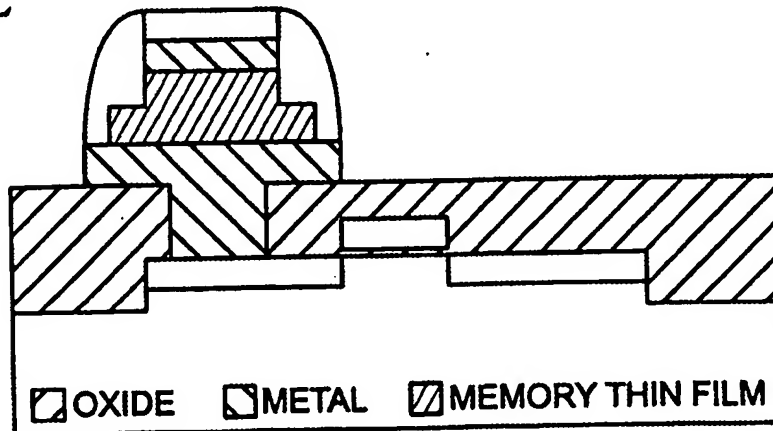


Fig. 6c



Replacement  
Sheet

Fig. 6d

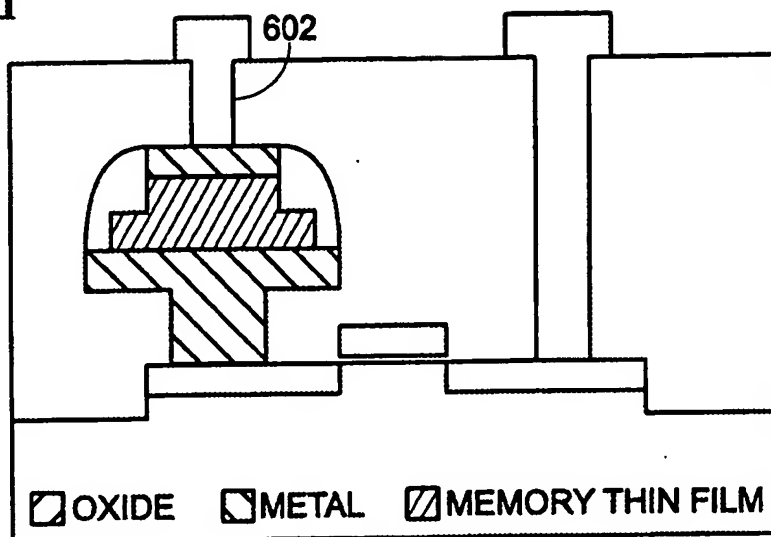
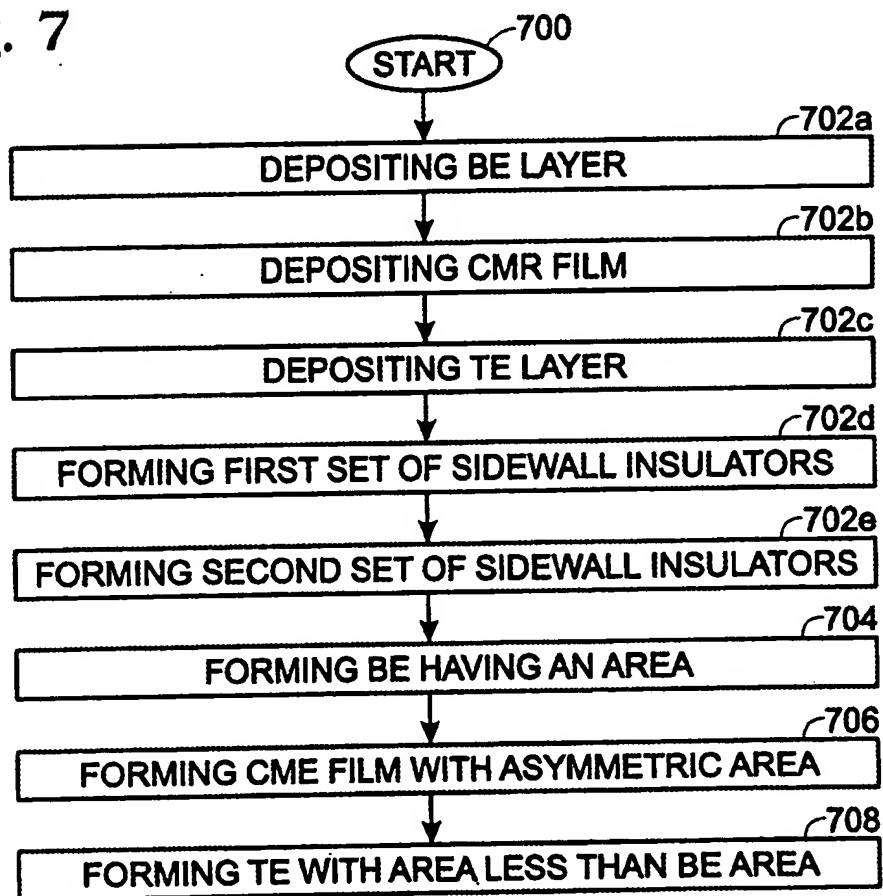


Fig. 7



Replacement  
Sheet

Fig. 8

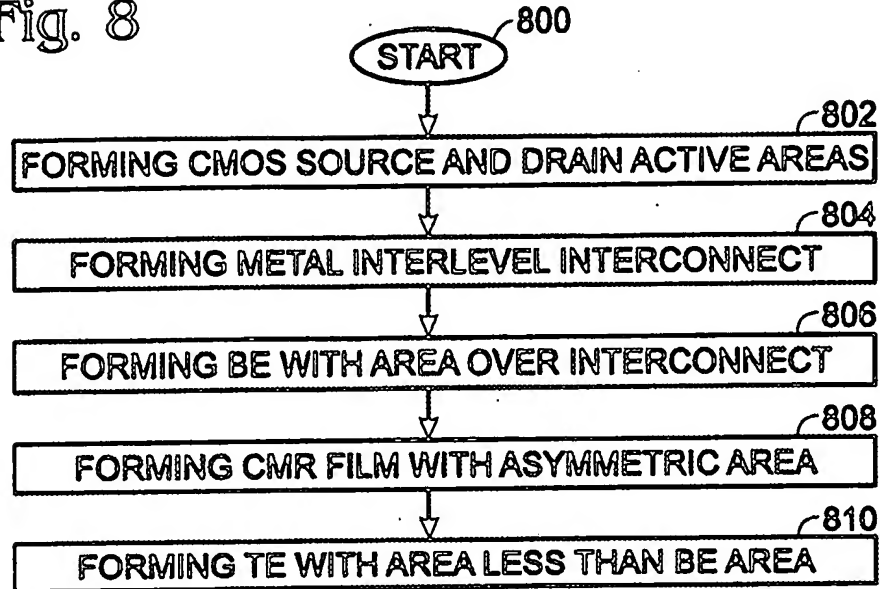


Fig. 9

